

ABSTRACT

An apparatus and related method for measuring the presence or degree of stratified flow in a two-phase flow is disclosed. A first speed of sound for the fluid flowing through the pipeline is measured for an ultrasonic signal that would reflect from stratified flow, if present. A second speed of sound is measured at a location that would not reflect off the stratified flow. A difference in these two measurements indicates the presence of stratified flow. The level of stratified flow can be determined based on the magnitude of the difference. Because this method is so sensitive to changes in the amount of stratified flow, it is more reliable than previously known methods.